

**REMARKS**

In accordance with the foregoing, claim 1 has been cancelled. No new matter is presented in the foregoing and, accordingly, approval and entry of same are respectfully requested.

**STATUS OF CLAIMS**

Claim 1 has been cancelled.

Claims 1, 3-14, 16-24, 26 and 27 are rejected.

Claims 1, 3-14, 16-24, 26 and 27 are pending and under consideration.

**ITEM 3: REJECTION OF CLAIMS 1, 3-14, 16-24, 26 FOR OBVIOUSNESS UNDER 35 U.S.C. §102(b) IN VIEW OF ANDOH ET AL. (U.S. PATENT 4,044,349);**

**ITEM 4: REJECTION OF CLAIMS 1, 3-14, 16-24, 26 FOR OBVIOUSNESS UNDER 35 U.S.C. §102(b) IN VIEW OF SAKUMA (U.S. PATENT 4,384,287);**

**ITEM 5: REJECTION OF CLAIM 27 FOR OBVIOUSNESS UNDER 35 U.S.C. §102(a) AS BEING ANTICIPATED BY ADMITTED PRIOR ART**

The rejections are respectfully traversed.

**ITEM 6: EXAMINER'S RESPONSE TO ARGUMENTS**

In this Item, the Examiner contends at page 4 of the Action that the Remarks are not persuasive "as the newly added limitation does not change the scope of the claims at all, noted...[sic-in]... the rejection above."

The following Remarks are submitted as further clarifying the distinctions between the present invention and the circuit operation of Andoh, U.S. Patent 4,044,394). As will be noted, both references relied upon suffer from a common problem of noise in the ground power source level which cannot be prevented in view of the respective common characteristics of the circuits of those references.

According to claim 3, when a front edge of a drive voltage pulse is applied between the first and second electrodes, the drive circuit changes the first and second electrodes from a first state in which the first and second electrodes are connected to a first power source different from the ground power source, to a second state in which the first and second electrodes are connected to a second power source different from the ground power source. Claims 5 and 7

are similar to claim 3. Having the first and second electrodes not connected to the ground power source prevents a large discharge current from flowing into the ground power source line when a discharge occurs, and producing noise on the ground power source level.

On the other hand, in Andoh and Sakuma, the drive voltage is applied from the ground power source, therefore, the noise in the ground power source level cannot be prevented.

With respect to claim 27, the Examiner is wrong on the corresponding part in the FIGS. 24A and 24B because FIGS. 24A and 24B are separate, independent drawings. In FIG. 24A, one of the first and second electrodes becomes +Vs and the other of them becomes ground level. In FIG. 24B, one of the first and second electrodes becomes -Vs and the other of them becomes ground level. Therefore, these drawings do not disclose the configuration of the circuit or the voltage conditions as recited in claim 27. The two drawings should not be viewed together.

With reference to FIG. 4A of the present application, in a sustain period, when a sustain pulse is applied between the X-Y electrodes, a large current due to plasma discharge flows into the applied power source lines. Further, when the sustain pulse is completed, the X-Y electrodes are shorted via -V1 and, therefore, a discharge current of the capacitor, and not a plasma discharge current, flows into the applied power source line -V1. Therefore, in claim 3, when a front edge of a drive voltage pulse is to be applied between the first and second electrodes, the drive circuit changes the first and second electrodes from a first state, in which the first and second electrodes are connected to a first power source (-V1), different from said ground power source, to a second state, in which the first or second electrode is connected to a second power source (+V2), different from said ground power source, so as to apply a drive voltage between said first and second electrodes.

Claim 3 is silent as to the function of the drive circuit when the drive voltage pulse is completed. On the other hand, claim 4/3 explicitly defines such an operation - - and explicitly sets forth that:

said drive circuit returns said first and second electrodes to the first state, of being connected to said first power source, upon completion of the application of said drive voltage pulse.

Claims 5 and 6, claims 7 and 8, and claims 9 and 10 are in the same respective relationships as are claims 3 and 4.

According to Andoh, FIGS. 4A and 4B, when the pulses  $+V_w/2$  and  $-V_w/2$  are applied to the X and Y electrodes, respectively, a large, plasma discharge current flows through the potential lines  $+V_w/2$  and  $-V_w/2$ , therefore, no current flows into the ground power source line. However, when the pulse is completed, both the X and Y electrodes are returned to the ground power source line, and the discharge current of the capacitor formed of the X-Y electrodes flows into the ground power source line. This causes a large current noise in the ground power source level.

For further clarification, the Examiner is requested to understand that the first power source  $-V_1$  and the second power source  $+V_2$  are different power sources from the ground power source. A power generator can generate various different power sources from the supplied external power source, of which  $-V_1+V_2$  and ground are three (3) such different power sources.

The Examiner further is referred to the Response filed April 2, 2003 which provides a detail analysis of the Andoh reference and points out the Examiner's errors in contending that Andoh does not use a ground reference voltage; furthermore, it supplied copies of FIGS. 4A through 7B of the present application with annotations explaining the current paths in FIGS. 4B through 7B for the respective drive waveforms of FIGS. 4A-7A.

The Examiner is respectfully referred to the specification at page 13, line 20 through page 15, line 19 relating to the operations illustrated in FIG. 4A and FIG. 4B. During the period  $t_1$ , as described at page 13 beginning at line 20, both the X and Y electrodes are maintained at the potential of the first power source  $-V_1$  (as seen in FIG. 4A) and then, as described beginning at page 14, line 1, the Y electrodes are connected to the second power source  $+V_2$  which applies a discharge pulse between the Y and X electrodes. Following that discharge pulse, the Y electrodes are once again connected to the first power source  $-V_1$ .

As discussed in the paragraph at page 14, lines 6-13, a discharge current flows along the path shown in FIG. 4B - - and "an excessively large discharge current does not flow to the ground power source line GND." (Page 14, lines 11-13).

Thereafter, during the fall of the pulse upon completion of the application of the drive pulse, current flows between the electrodes via the first power source  $-V_1$  - - and again, no current flows to the ground power source line GND. (Page 14, lines 14-18)

This explanations at page 14, line 19 through page 15 then explain the operations which occur during period  $t_2$  - - producing a current flow in a path opposite to the path shown in FIG.

4B with the same result that no noise is generated by a large current at the ground power source GND - - which, on the other hand, occurs in the prior art.

Subsequent pages of the specification provide a detailed explanations of the drive circuits and drive waveforms of the subsequent figures/subsequent embodiments of the invention.

#### **REQUEST FOR INTERVIEW**

Applicants respectfully submit that the rejections, which are identical to those of the Final Office Action mailed May 9, 2003, were overcome by the Arguments presented in the Preliminary Amendment filed with an accompanying Request For Continued Examination (RCE) in response thereto on August 9, 2003. Applicants also note that an Interview was requested by that Response at page 9 which it was hoped would resolve any remaining questions or formalities requiring attention and, particularly, arising out of the matters addressed at the Interview of June 17, 2003.

Applicants request a further Interview at this time, since it is believed that the same would be particularly beneficial, to advance prosecution toward allowance.

## CONCLUSION

It is respectfully submitted that the foregoing demonstrates clear support of the claims in the specification and the clear patentable distinctions of the invention over the references and rejections of record. There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

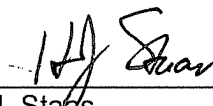
If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

Date: September 11, 2006

By: \_\_\_\_\_

  
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